

Category: Lawn and Garden

California's lawn and garden off-road emissions inventory is an estimate of the amount and types of pollutants emitted from thousands of pieces of equipment used in lawn and garden applications. These equipment types comprise of 2-stroke and 4-stroke gasoline and diesel engines. The category can be further classified by residential or commercial usage and handheld or non-handheld application.

The top 4 most popular equipment types in this category are:

| Equipment Type | Fuel Type | 2000 Population |
|-------------------------------|------------------|------------------------|
| Lawn Mowers | G4 | 3932264 |
| Trimmers/Edgers/Brush Cutters | G2 | 2878113 |
| Chainsaws | G2 | 2249477 |
| Leaf Blowers/Vacuums | G2 | 994098 |

Emissions Inventory:

As with other OFFROAD equipment types, the emissions inventory for the lawn and garden category is calculated as the product of the emission rate (grams per horsepower-hour), engine population, and activity (hours per year) in annual average use hours.

[Calculating Emissions Inventory \(PDF Format\)](#)

For the current emissions inventory (tons/day):

[Air Resources Board Almanac](#)

Input Data Sources:

The input factors used by the OFFROAD Model come from various data sources:

| Input Factor | Source of Data |
|-----------------------------|--|
| Population (base year 2000) | EPA Grant Study (2003, gas), Power Systems Research (1996, diesel) |
| Useful Life | Power Systems Research (1996) |
| Activity (hr/yr) | EPA Grant Study (2003, gas), Power Systems Research (1996, diesel) |
| Average horsepower | Power Systems Research (1996) |
| Load factor | Power Systems Research (1996) |
| Allocation factor | Energy & Environmental Analysis (EEA) document (1995) |
| Growth factor | Cal State Fullerton Study (1994) |
| Survival rate | Power Systems Research (1996) |

For more additional background information on the input factors used by the OFFROAD Model: [\(Document Link – Gas\)](#) and [\(Document Link – Diesel\)](#)

For tables of input data for the lawn and garden category: [\(Document Link\)](#)

Adopted Regulations for Lawn and Garden Category:

2004: *(Reflected in OFFROAD Model)* Board approved small off-road exhaust and evaporative emission control regulations. [\(Document Link\)](#)

1998: *(Reflected in OFFROAD Model)* Board approved rulemaking on small off-road utility engine regulations. [\(Document Link\)](#)

1998: *(Reflected in OFFROAD Model)* Board approved the emissions inventory for Small Off-road Engines (≤ 25 hp) from the OFFROAD Model. [\(Document Link\)](#)

Future Improvements to the Lawn and Garden Category:

The emissions inventory from the OFFROAD Model strives to accurately represent the 'real-world' as accurately as possible. Therefore, the methodologies and data sources are constantly re-evaluated and updated where applicable. The following items are future improvements for the construction & mining category:

- Update commercial equipment population and activity values as new data becomes available
- Revise growth factors
- Allocate equipment from the county down to the neighborhood level (GIS)